

PATENT ABSTRACTS OF JAPAN

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(21)Application number : 07-208828 (71)Applicant : KAWASAKI STEEL CORP
 R M J CONSULTING:KK

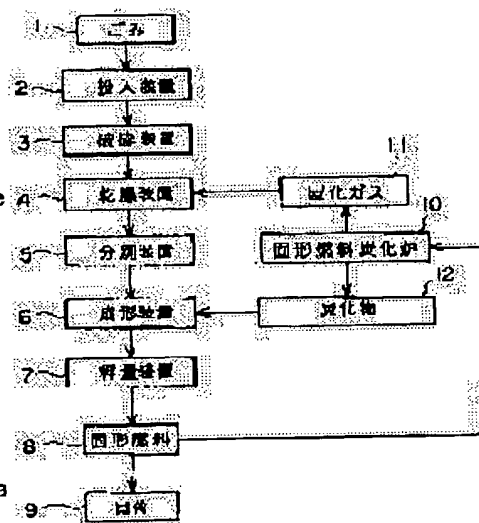
(22)Date of filing : 16.08.1995 (72)Inventor : SATO AKIMUNE

(54) METHOD AND APPARATUS FOR PREPARING SOLID FUEL

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce the amt. of kerosine used for drying in the waste disposal process, to eliminate the need to dispose of ash without discharging the ash from the process through the use of a solid fuel produced from waste disposal, to effectively use the heat, and to accelerate the deodorization and prevention against putrefaction by taking advantage of deodorant and antiseptic effect of the carbide.

SOLUTION: In a conventional waste disposal apparatus, wherein a municipal waste 1 is introduced into a crushing device 3 by means of a charge device 2, dried in a drier 4, separated by means of a separator 5 into organic materials and metals, glass or the like, and a raw material for a solid fuel is molded in the molding step 6 into a solid fuel 8, the following constitution is adopted. A carbonizing furnace 10 for a solid fuel 8 is provided, part of the solid fuel 8 is fed into the furnace to carbonize the fuel, and a carbonization gas 11 is used in a drier 4, while a carbide 12 is introduced into a molding device 6 for a solid fuel.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the refuse disposal approach and its equipment.

[0002]

[Description of the Prior Art] Conventionally, a contaminant is processed through crushing, desiccation, and a judgment process as a technique of processing a municipal solid waste, and there is the refuse disposal approach which fabricates a solid fuel. Usually at such a desiccation process of down stream processing, kerosene was used. Moreover, as for the solid fuel which did in this way and was manufactured from the contaminant, the technique in which some odors remain and add lime to a solid fuel for deodorization and preservation from decay is known. However, a lot of lime is required in this case, and there is a problem that ash content increases.

[0003] Moreover, there is a garbage disposal equipment equipped with crushing of a municipal solid waste, desiccation, judgment, and solid-fuel shaping equipment as equipment which processes the above-mentioned municipal solid waste. Activated carbon deodorization equipment is usually attached to such equipment in many cases.

[0004]

[Problem(s) to be Solved by the Invention] The after heat which this invention has the problem which requires processing of the ashes produced from a solid fuel in this case for the purpose of reducing use of kerosene at a desiccation process in the above-mentioned municipal-solid-waste processing using the solid fuel generated, and an ashy graveyard place is needed, and ashes have makes it a technical problem to solve the problem that it does not contribute to desiccation of a contaminant.

[0005]

[Means for Solving the Problem] In the approach of having been made in order that this invention might solve the above-mentioned trouble, crushing and drying it, classifying it, fabricating a municipal solid waste, and manufacturing a solid fuel While carbonizing this, generating carbide and carbonization gas using said some of manufactured solid fuels and using carbonization gas for said desiccation process, it is the manufacture approach of the solid fuel characterized by adding in the shaping raw material of a solid-fuel forming cycle by making carbide into deodorization / preservation-from-decay material.

[0006] At this time, it is good also as performing activity Chinese poem-ization to some or all of said carbide, and using for them the carbide formed into the activity Chinese poem as activated carbon of activated carbon deodorization equipment. The equipment of this invention which can enforce the above-mentioned this invention approach suitably In the garbage disposal equipment equipped with crushing of a municipal solid waste, desiccation, judgment, and solid-fuel shaping equipment The solid-fuel carbonization furnace which the equipment and this solid fuel which extract and send out said some of solid fuels are carbonized [furnace], and generates carbide and carbonization gas, It is the garbage disposal equipment characterized by having addition equipment which adds the carbonization gas induction duct which guides carbonization gas to a dryer, and carbide in the shaping raw material of a solid-fuel forming cycle. In addition, it is

desirable when attached in the activity Chinese poem-ized equipment which gives activity to said carbide.

[0007] The equipment of this invention which can enforce the above-mentioned this invention approach suitably In unsettled equipment equipped with crushing of a municipal solid waste, desiccation, judgment, and solid-fuel shaping equipment It is characterized by having addition equipment which adds the solid-fuel carbonization furnace which the equipment and this solid fuel which extract and send out said some of solid fuels are carbonized [furnace], and generates carbide and carbonization gas, the carbonization gas induction duct which guides carbonization gas to a dryer, and this carbide in the shaping raw material of a solid-fuel forming cycle. Furthermore, it is attached in the activity Chinese poem-ized equipment which gives activity to said carbide, and if it has deodorization equipment which uses this, use of a suitable solid fuel and use to deodorization can be performed.

[0008]

[Function] By the refuse disposal approach of this invention, since the solid fuel manufactured by refuse disposal is used for the desiccation process of a contaminant, the amount of the kerosene used is reducible. Carry out to not burning this solid fuel and making it carbonize, and it is made to produce carbonization gas and carbide, and is made not to produce ashes in this invention in use of the solid fuel manufactured by refuse disposal. [Hot carbide is mixed in the raw material of the forming cycle of a solid fuel, using carbonization gas as a heat source of a desiccation process. Therefore, it is unnecessary to process the generated ashes.]

[0009] By mixing in the raw material of the forming cycle of a solid fuel the hot carbide generated at the carbonization process, the heat can be used effective in desiccation. Since 300 degrees C of temperature are near at moisture zero, if it adds to a making machine small quantity every and is made for a carbonized part not to light it, the desiccation at the time of shaping will be urged to it, and it will reduce the load of a drying furnace. For example, if 23% of a generating solid fuel is carbonized, since carbide can be taken 30% among those, it becomes possible to add a total of 7% of carbide. This carbide has deodorization and the preservation-from-decay effectiveness. By using this deodorization and the preservation-from-decay effectiveness, deodorization and preservation from decay of a solid fuel are promoted, and preservation of a solid fuel becomes easy.

[0010] An ashes processor can be unified to the treatment facility of the ashes when burning a solid fuel by carbonizing and adding to a solid fuel, although ashes are generated and processing of ashes is needed, when a solid fuel is only used for the desiccation process of a contaminant as a fuel. It is possible to perform activity Chinese poem-ization to some or all of said carbide, and to give the same property as activated carbon. This carbide formed into the activity Chinese poem can be used as activated carbon of activated carbon deodorization equipment.

[0011] A solid-fuel carbonization furnace restricts supply of air, partial combustion of the solid fuel is carried out, and it heats it, generates carbonization gas, and makes carbide generate. This furnace is good also as a successive reaction furnace, and may use the reactor of a batch type. When using the reactor of a batch type, it is desirable to carry out sequential operation of two or more fission reactors. Moreover, as activity Chinese poem-ized equipment which gives activity to this carbide, continuation or the steam reactor of a

batch type is used.

[0012]

[Example] The block diagram and drawing 3 which show the array of the equipment which uses drawing 1 for the refuse disposal of the example of this invention are the flow sheet. It is supplied to shredding equipment 3 with injection equipment 2 from an acceptance hopper, dry with a dryer 4, and a municipal solid waste 1 has the organic substance, a metal, glass, etc. classified by judgment equipment 5, and is crushed with secondary shredding equipment 18. The classified combustible is supplied to shaping equipment 6 as a raw material of a solid fuel, is fabricated here, serves as a solid fuel 8 through weighing capacity equipment 7, and is shipped by truck 9 grade.

[0013] In the conventional equipment of a more than, in the example of this invention, some solid fuels 8 are isolated preparatively, it feeds into the newly formed solid-fuel carbonization furnace 10, and it is carbonized. Drawing of longitudinal section of an example of this carbonization furnace 10 was shown in drawing 4. The carbonization furnace 10 equipped the carbonization furnace body 22 of a double pipe rotary-kiln type with the hopper 21 which supplies a solid fuel 20, the exhaust port 23 which discharges the carbonized solid fuel (carbide 12), and the exhaust port 24 of carbonization gas 11, and is equipped with the hot blast producer 25 which heats the carbonization furnace body 22, a jacket 26, and the hot blast gas exhaust 27. in the both ends of the carbonization furnace body 22, the attachment **** seal is carried out, and hoods 28 and 29 support on the carrier roller which is not illustrated, and rotate with the slewing gear which is not illustrated. If it mixes with the mixed screw 14 of drawing 3 by porosity and the carbonized solid fuel (carbide 12) mixes it with a contaminant with the mixed hopper 17, it will deodorize by adsorbing the odor particle of a contaminant, and after heat will contribute it to desiccation of a raw material.

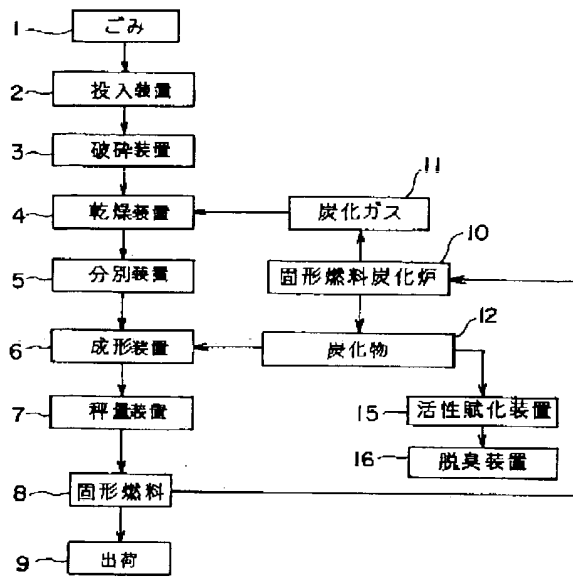
[0014] As the carbonization gas 11 which occurred at the carbonization furnace 10 is shown in drawing 3, it uses as an auxiliary heat source of a dryer 4, and it is mixed into the shaping raw material of a solid fuel, and carbide 12 is supplied to shaping equipment 6. The sensible heat which carbide 12 holds is used for heating of a shaping raw material. It is as follows when an example of the material balance in the flow of drawing 1 is raised. When the 200kg contaminant 1 is thrown in, the shaping raw material discharged from judgment equipment 5 is set to about 100kg. It will be set to 110kg if 10kg of carbide 12 is mixed as a shaping raw material. 70% is shipped, 30% is isolated preparatively and a solid fuel 8 is supplied to the solid-fuel carbonization furnace 10. The carbide 12 discharged from the carbonization furnace 10 is set to 10kg at about 30%.

[0015] Drawing 2 is a flow sheet which shows the array of the garbage disposal equipment of another example. In drawing 2, reference numbers 1-12 are the same as drawing 1. In drawing 2, delivery and activity are Chinese-poem-ized to activity Chinese poem-ized equipment 15 for some carbide 12 generated from the carbonization furnace 10. The activated carbon which Chinese-poem-ized activity is used for deodorization equipment 16 grade. Steaming performed activity Chinese poem-ization of carbide 12. The example of the property after the formation of an activity Chinese poem was hung up over Table 1.

[0017]

[Effect of the Invention] By the refuse disposal approach of this invention, since the solid

fuel manufactured by refuse disposal is used for the desiccation process of a contaminant, the amount of the kerosene used is reducible. Since it is made to carbonize in using this solid fuel, without producing ashes, processing of the ashes in the facility of a solid fuel is unnecessary. Moreover, by mixing hot carbide in the raw material of the forming cycle of a solid fuel, heat can be used effective in desiccation. Deodorization and preservation from decay of a solid fuel are promoted by deodorization and the preservation-from-decay effectiveness of this carbide, and preservation of a solid fuel becomes easy. Moreover, an ashes processor can be unified to the treatment facility of the ashes when burning a solid fuel by carbonizing and adding to a solid fuel, although ashes are generated and processing of ashes is needed, when a solid fuel is only used for the desiccation process of a contaminant.

Drawing selection 

[Translation done.]